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EXAMINER				
BLAIR, KILE O				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,528

Applicant(s)

CHEUNG ET AL.

Examiner

Kile O. Blair

Art Unit

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 17, 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 18-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 18-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/17/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office action is in response to the communication filed on January 17, 2008. Currently amended claims 1-3, 10, 19, 21, 22, 24, 26-29, 31, and 32; original claims 4, 5, 8, and 9; and previously presented claims 6, 7, 18, 20, 23, 25, 30, and 33 are pending. Claims 11-17 are canceled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5-10 and 18-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Allen et al. (US Pub. No. 2002/0149705).

Regarding claim 1, Allen et al. teaches a system for enhancing an audio system (the set top box and hybrid communicator/ remote control, see Fig. 3, 102 and Fig. 2, 106), the audio system delivers audio output to an audio output terminal (telephony circuit which is connected to transmitter and can output audio signals to transmitter, see Fig. 3, 303 and [0071]), said system comprising: a wireless transmitter that connects to the audio output terminal to receive the audio output and wirelessly transmits signals

corresponding to the audio output (wireless transmitter, Fig. 3, 202); and a personal audio device usable by a user to hear the audio output (hybrid communicator/ remote control, Fig. 2, 106), said personal audio device including at least: a wireless receiver capable of receiving the wirelessly transmitted signals by said wireless transmitter (receiver, Fig. 2, 204); a controller operatively connected to said wireless receiver (volume buttons, Fig. 2, 220), and a speaker operatively connected to said controller (hybrid communicator/ remote control speaker, Fig. 2, 242); **wherein said system further includes a data storage device for storing user information regarding the particular user (history of recent calls to show contacts with whom the user has communicated, [0091])**, wherein said system, generates a customized audio output based on the audio output and the user information (a digital audio sample of a contact's spoken name found on list, Fig. 2, 252, [0096]), and wherein said speaker produces an audio sound output in accordance with the customized audio output (playback of the digital audio sample of a contact's spoken voice [0096]). In addition, Allen et al. also teaches that the described features, structures, or characteristics may be combined in any suitable manner in one or more embodiments (see [0028]). Therefore, any features from one embodiment of the invention are inherently existent in another embodiment where said features may be combined in a suitable manner.

Regarding claim 2, Allen et al. teaches a system as recited in claim 1, wherein said data storage device is included in said personal audio device wherein said controller operatively connects to said data store (hybrid communicator/ remote control or the set top box 102, both of which can store contacts in certain embodiments,

[0059]), and wherein said controller operates to produce the customized audio output based on the audio output and the user information (playback of the digital audio sample of a contact's spoken voice [0096]).

Regarding claim 5, Allen et al. teaches a system as recited in claim 1, wherein the user information comprises at least one user preference (The user information component of the hybrid communicator/ remote control can store user preferences [0082]).

Regarding claim 6, Allen et al. teaches a system as recited in claim 1, wherein said personal audio device further obtains environmental information pertaining to the vicinity of said personal audio device, and wherein the customized audio output is further dependent on the environmental information (Retraining of noise cancellation module 908 based on the acoustics of the room can be done automatically by the device, [0126]; Noise cancellation module may be implemented within the hybrid communicator/ remote control, [0124]).

Regarding claim 7, Allen et al. teaches a system as recited in claim 6, wherein the environmental information includes at least a noise level, and wherein the volume of the audio sound output is dependent on the noise level (noise generator may generate a white noise which will then be used to modify the adaptive filter to improve noise cancellation affecting the audio sound output).

Regarding claim 8, Allen et al. teaches a system as recited in claim 6, wherein said personal audio device further comprises: at least one environmental sensor that

acquires the environmental information (microphone of the hybrid communicator/ remote control, [0127]; see Fig. 2, 244).

Regarding claim 9, Allen et al. teaches a system as recited in claim 6, wherein the environmental information is determined based on a position of said personal audio device or the user (the microphone (Fig. 2, 270) mounted on a boom of the headset (Fig. 2, 264) connected to the hybrid communicator/ remote control that is used to reduce television audio interference by placing the microphone closer to the user's mouth, [0050]).

Regarding claim 10, Allen et al. teaches a system as recited in claim 1, wherein said data storage device is included in said wireless transmitter, and for enhancing on, wherein said wireless transmitter operates to produce the customized audio output based on the audio output and the user information (The hybrid communicator/ remote control is a wireless transmitter and it includes a data store for storing contacts [0059]. The hybrid communicator/ remote control operates to produce a verbal identifier based on audio output and user information in data store [0024]).

Regarding claim 18, Allen et al. teaches a system as recited in claim 1, wherein the audio system is an entertainment system (The audio system can be used with a television set for entertainment; Fig. 1, 104).

Regarding claim 19, Allen et al. teaches a system as recited in claim 1, wherein said data storage device is portable and removable from said system (The hybrid communicator/ remote control including data store is able to be removed from the system; Fig 1, 106).

Regarding claim 20, Allen et al. teaches a system as recited in claim 1, wherein said personal audio device is wearable by the user (The hybrid communicator/ remote controller shown in figure 2 is able to be worn by placing the headset {264} on the user's head).

Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Warren (US Pat. No. 7,013,009 B2).

Regarding claim 21, Warren teaches a system for enhancing an audio system, the audio system delivers audio output to an audio output terminal (the mentioned cellular phone or compact disc player and their audio output terminal, col. 4, lines 21-31), said system comprising: a wireless transmitter that connects to the audio output terminal to receive the audio output and wirelessly transmits signals corresponding to the audio output (cellular phone or compact disc player must inherently have a wireless transmitter in order to communicate with the eyeglasses as disclosed); and a personal audio device usable by a user to hear the audio output (eyeglasses 10, col. 4, lines 23-31), said personal audio device including at least: a wireless receiver capable of receiving the wirelessly transmitted signals by said wireless transmitter (receiver, col. 3, lines 42-45); a controller operatively connected to said wireless receiver (the volume controller adjusts the volume of the sound from the receiver that is output by the speaker, col.5, lines 15-16); and a directional speaker operatively connected to said controller, said speaker produces a directional audio sound output in accordance with the audio output, wherein the directional audio sound output is an audio sound output

that is directionally constrained (the speaker can be a directional speaker, col. 5, lines 4-7), wherein said personal audio device is a mobile device that is for use by a particular user, and wherein said personal audio device is portable by the particular user (the eyeglasses can be used by a particular user while biking, col. 4, lines 4-8).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. in view of Zurek et al. (US Pat. No. 6,363,139 B1).

Regarding claim 3, Allen et al. teaches a system as recited in claim 1, wherein said system is provided internal to a building (the device is for use in a room, Allen et al., [0126]).

Although Allen et al. does not explicitly teach the feature wherein said controller produces ultrasonic drive signals based on the customized audio output and supplies the ultrasonic drive signals to said directional speaker for output of the audio sound output in a directionally constrained manner, and wherein the audio sound output in the directionally constrained manner is for delivery for one or more persons internal to the building, Zurek et al. teaches a communication system with an ultrasonic transducer (Zurek et al., col. 2, lines 11-19) that can output signals in a directionally constrained manner (Zurek et al., col. 2, lines 41-45). It would have been obvious to combine the communication system of Zurek et al. with that of Allen et al. with the motivation of reducing interference between devices (Allen et al., [0050]) and increasing privacy of communication.

Regarding claim 4, Allen et al. teaches a system as recited in claim 1. Although Allen et al. does not explicitly teach the feature wherein the user information comprises a user hearing profile, Zurek et al. discloses a user hearing profile (Zurek et al., col. 6, lines 59-63). It would have been obvious to one of ordinary skill in the art to combine the communication system of Zurek et al. with that of Allen et al. with the motivation of further customizing the device for a user.

Claims 22, 24-26, 29-31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warren in view of "Technology Introduction," American Technology Corporation, 2001, pp. 1-19 (hereinafter as "ATC").

Regarding claim 22, Warren teaches a system as recited in claim 21. Although Warren does not explicitly teach the feature wherein said directional speaker is an ultrasonic speaker, and wherein the signals driving the speaker are ultrasonic drive signals that are supplied to said directional speaker for output of the directional audio sound output, it would have been obvious to use the hyper sonic sound as disclosed by ATC (ATC, Page 5) since ATC discloses that ATC may be used in directional speakers in communication devices (ATC, Page 9) and using hypersonic sound in the directional speakers of Warren would have yielded a predictable result.

Regarding claim 24, Warren teaches a personal audio device usable by a user to hear audio sound (eyeglasses 10, col. 4, lines 23-31), said personal audio device comprising: a controller for transforming audio data into speaker drive signals; and a speaker operatively connected to said controller, said speaker produces a directional acoustic output in accordance with the speaker drive signals (the volume controller adjusts the volume of the sound from the receiver that is output by the speaker, col.5, lines 15-16), the directional acoustic output being an audio sound output that is directionally constrained wherein the speaker drive signals are drive signals that are supplied to said speaker (the speaker can be a directional speaker, col. 5, lines 4-7), wherein said personal audio device is for use by a particular user, wherein said

personal audio device is a mobile device, and wherein said personal audio device is portable by the particular user (the eyeglasses can be used by a particular user while biking, col. 4, lines 4-8).

Although Warren does not explicitly disclose that the speaker uses ultrasonic signals, it would have been obvious to do so for the same reasons as in the rejection of claim 22.

Regarding claim 25, Warren in view of ATC teaches a device as recited in claim 24, wherein said personal audio device further comprises: a wireless receiver capable of receiving the audio data that are transmitted to said personal audio device by a wireless transmitter (receiver, col. 3, lines 42-45).

Regarding claim 26, Warren in view of ATC teaches a device as recited in claim 24, wherein said personal audio device is capable of being worn (eyeglasses 10, col. 4, lines 23-31).

Regarding claim 29 Warren teaches a method for providing audio sound output from an audio system to a user in a wireless manner (eyeglasses provide audio sound from a cell phone, col. 5, lines 19-24), said method comprising: receiving audio signals at a wireless audio adapter that is attached to an audio output port of the audio system, the audio signals being provided by the audio system via the audio output port (there is inherently an audio output port at which the BLUETOOTH antenna or wireless audio adapter is attached); wirelessly transmitting, via the wireless audio adapter, the audio signals to a specific personal audio device that has a directional speaker (the eyeglasses receiver the audio signals, col. 5, lines 19-24; and there is a directional

speaker, col. 5, lines 4-7); and producing audio sound output using the directional speaker (the directional speaker plays sound, col. 5, lines 4-7), the audio sound output being based on the audio signals (the receiver communicates with the speaker and outputs audio signals, col. 5, lines 18-25), and the audio sound output being in a directionally constrained manner (directional speaker, col. 5, lines 4-7), wherein the personal audio device is a mobile device that is for use by a particular user ((the eyeglasses can be used by a particular user while biking, col. 4, lines 4-8)

Although Warren does not explicitly teach the feature wherein said directional speaker is an ultrasonic speaker, and wherein the signals driving the speaker are ultrasonic drive signals that are supplied to said directional speaker for output of the directional audio sound output, it would have been obvious to use the hyper sonic sound as disclosed by ATC (ATC, Page 5) since ATC discloses that ATC may be used in directional speakers in communication devices (ATC, Page 9) and using hypersonic sound in the directional speakers of Warren would have yielded a predictable result.

Regarding claim 30, Warren in view of ATC teaches a method as recited in claim 29, wherein said producing comprises: generating ultrasonic drive signals based on the audio signals for the directional speaker (the ultrasonic signals of ATC are used in the directional speaker of Warren, col. 5, lines 4-7).

Regarding claim 31, Warren in view of ATC teaches a method as recited in claim 29, wherein said producing comprises obtaining user information pertaining to the particular user wherein the audio sound output being produced is further based on the user information (the speaker can be extended, pivoted, or otherwise moved based on

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whether it is currently needed or not which user information, Warren, col. 6, lines 19-27).

Regarding claim 33, Warren in view of ATC teaches A method as recited in claim 29, wherein said producing comprises obtaining at least one environmental characteristic pertaining to the vicinity of the personal audio device, wherein the audio sound output being produced is further based on the at least one environmental characteristic (the volume control is used to adjust the audio signal based on the environmental noise level, col. 5, lines 15-17).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Warren.

Regarding claim 23 Warren teaches a system as recited in claim 21. although Warren does not explicitly disclose the feature wherein the directional audio sound output by said directional speaker is substantially confined to a predetermined direction plus or minus 15 degrees, it would have been a matter of obvious design choice to find an optimum value to one of ordinary skill in the art to use a directivity of plus or minus 15 degrees.

Claims 27 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warren in view of ATC in further view of Okubo et al. (US Pat. No. 5,450,494).

Regarding claim 27 Warren in view of ATC teaches a device as recited in claim 24. Although Warren in view of ATC does not explicitly teach the feature wherein, when said controller produces the speaker drive signals, said controller takes into

consideration a hearing characteristic of the user, it would have been obvious to use the controller of Okubo et al. (amplification controller that receives signal based on hearing characteristics of the user, col. 6, lines 4-9) because doing so would have been obvious to try with the motivation of having the controller provide more customized sound to the user.

Regarding claim 32, Warren in view of ATC teaches a method as recited in claim 31. Although Warren in view of ATC does not explicitly teach the feature wherein the user information comprises an audio hearing characteristic associated with the user, it would have been obvious to use the controller of Okubo et al. (amplification controller that receives signal based on hearing characteristics of the user, col. 6, lines 4-9) because doing so would have been obvious to try with the motivation of having the controller provide more customized sound to the user and determining whether or not the user needs the speaker to be moved or adjusted.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Warren in view of ATC in further view of Okubo et al. and in further view of Brain, Marshall, How USB Ports Work, October 11,2002, www.howstuffworks.com/usb (hereinafter as "Brain").

Regarding claim 28 Warren in view of ATC in further view of Okubo et al. teaches a device as recited in claim 27. Although Warren in view of ATC in further view of Okubo et al. does not explicitly teach the feature wherein the hearing characteristic is provided to said personal audio device by a removable, portable data storage device

that can operatively connect to said personal audio device, it would have been obvious to use a portable USB data storage device (Brain, pg. 4, ¶ 5) with the motivation of providing the ability to easily import new hearing characteristics based on different users.

Response to Arguments

Applicant's arguments with respect to claim 1-10 and 18-33 have been considered but are moot in view of the new ground(s) of rejection.

The previous rejections under 35 U.S.C. 112 and the objection to the specification have been withdrawn.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kile O. Blair whose telephone number is (571) 270-3544. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KB

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615

